



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,098	03/30/2004	Boguslaw Gajdeczko	1857.2430000	3089
26111	7590	12/28/2005	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			BONANTO, GEORGE P	
			ART UNIT	PAPER NUMBER
			2855	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/812,098	GAJDECZKO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	George P. Bonanto	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on 15 November 2005.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/30/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

Claims 14 and 15 contain the trademark/trade name Kapton and Mylar. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe the material from which the inner portion is made and, accordingly, the identification/description is indefinite.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 4,550,592 to Deschape.

As to claim 10, Deschape discloses a proximity sensor comprising a measurement leg having a measurement probe coupled thereto (branch passageways 28 and 32 and nozzle 40, Fig. 2) a reference leg having a reference probe coupled thereto (branch passageways 26 and 30 and

Art Unit: 2855

nozzle 40', Fig. 2) a bridge portion coupled between the measurement leg and the reference leg (differential pressure transducer 44, Fig. 2) and a diaphragm pressure sensor disposed within the bridge portion (differential pressure transducer 44, Fig. 2).

As to claim 11, Deschape further discloses that the pressure sensor comprises a diaphragm having a rigid outer portion and a displaceable inner portion that displaces in response to a pressure difference between the measurement leg and the reference leg (col. 3 lines 53-68) a sensor located proximate to the diaphragm and adapted to determine the displacement of the diaphragm inner portion (col. 3 lines 53-68) and a monitor and control system coupled to the sensor and adapted to determine the displacement of the diaphragm and adapted to determine the pressure difference from the displacement (col. 3 lines 53-68).

As to claim 12, Deschape discloses a proximity sensor comprising a measurement leg having a measurement probe coupled thereto (branch passageways 28 and 32 and nozzle 40, Fig. 1) a reference pressure (pressure in passageway-pressure chamber 30, Fig. 1, col. 3 lines 65-68) a bridge portion coupled between the measurement leg and the reference pressure (differential pressure transducer 44, Fig. 1) a diaphragm disposed within the bridge portion, the diaphragm including a rigid outer portion and a displaceable inner portion that displaces in response to a pressure difference between the measurement leg and the reference pressure (differential pressure transducer 44, Fig. 1) a sensor located proximate to the diaphragm and adapted to sense the displacement of the diaphragm inner portion (col. 3 lines 53-68) and a monitor and control system coupled to the sensor and adapted to determine the displacement of the diaphragm and to determine the pressure difference from the displacement (col. 3 lines 53-68).

As to claim 13, Deschape discloses a measurement leg having a measurement probe coupled thereto (branch passageways 28 and 32 and nozzle 40, Fig. 1) a reference pressure (pressure in passageway-pressure chamber 30, Fig. 1, col. 3 lines 65-68) a bridge portion coupled between the measurement leg and the reference pressure (differential pressure transducer 44, Fig. 1) a diaphragm disposed within the bridge portion, the diaphragm including a rigid outer portion and a displaceable inner portion that displaces in response to a pressure difference between the measurement leg and the reference pressure (differential pressure transducer 44, Fig. 1) a sensor located proximate to the diaphragm and adapted to sense the displacement of the diaphragm inner portion (col. 3 lines 53-68) and a monitor and control system coupled to the sensor and adapted to determine the displacement of the diaphragm and to determine the pressure difference from the displacement (col. 3 lines 53-68).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1, 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,496,265 to Duncan et al. in view of U.S. Patent No. 3,322,980 to Faure.

As to claim 1, Duncan et al. disclose a pressure gauge comprising a diaphragm having a rigid outer portion and a displaceable semi-elastic inner portion, the inner portion displaces in response to a pressure difference between first and second sides of the diaphragm (Figs. 28a and 28b and col. 8 line 65 to col. 9 line 44) a sensor located proximate to the diaphragm and adapted

Art Unit: 2855

to sense the displacement of the diaphragm inner portion (CCD array coupled to diaphragm by fiber, Col. 5 lines 19-38) and a monitor and control system coupled to the sensor and adapted to determine the pressure difference from the displacement of the diaphragm (DSP, col. 5 lines 39-50). Duncan et al. fail, however, to disclose that the diaphragm is sensitive to pressure changes in a range of approximately 0.1 to 0.5 inches of water.

Faure discloses a diaphragm that is sensitive to pressure changes in a range of approximately 0.1 to 0.5 inches of water (col. 4, line 46).

It would have been obvious to one of ordinary skill in the art to modify the pressure gauge of Duncan et al. by including the diaphragm with the sensitivity range disclosed in Faure in order to increase the sensitivity and accuracy of the gauge.

As to claim 3, Duncan et al. further disclose an optically reflective coating on a first side of the diaphragm inner portion (reflector surface, col. 5 line 32) wherein the sensor includes an optical transmitter and receiver optically aligned with the optically reflective coating (col. 5, lines 19-50).

As to claim 4, Duncan et al. further disclose that the sensor comprises an interferometer (col. 5 lines 19-20).

As to claim 5, Duncan et al. further disclose that the sensor comprises a white light interferometer (col. 5 lines 19-20).

As to claim 6, Duncan et al. further disclose that the sensor comprises a light transmitting module (col. 5. line 22) a light sensing module (col. 5 lines 39-46) adapted to directly receive a first light beam transmitted from the light transmitting module and to receive a second light beam transmitted from the light transmitting module and reflected back from the diaphragm (col.

Art Unit: 2855

5, lines 23-27) wherein the monitor and control system calculates the displacement of the diaphragm from an interference pattern generated from the first and second lights (col. 5 lines 35-50).

As to claim 7, Duncan et al. further disclose that the light transmitting module comprises a transmitting fiber (col. 5, lines 22-23) having an output coupled to a diffraction device that separates a source light into the first and second lights (col. 5, lines 35-38) wherein changes in the diaphragm displacement cause the interference pattern to include intensity modulated light (col. 5 lines 39-46) wherein the monitor and control system calculates the diaphragm displacement from the intensity modulated light (col. 5 lines 46-50).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,496,265 to Duncan et al. and U.S. Patent No. 3,322,980 to Faure, as applied to claim 6 above, and further in view of U.S. Patent No. 5,880,841 to Marron et al.

Duncan et al. further disclose that the light transmitting module comprises a transmitting fiber (fiber, Figs. 28a and 28b) outputting a first light at a first wavelength (LED at 850 nm, col.2 lines (10-12) wherein changes in the diaphragm displacement cause the interference pattern to change wherein the monitor and control system comprises a counter that decode the diaphragm displacement (col. 5, lines 39-50).

Duncan et al. fail to disclose that the light transmitting module comprises a second transmitting fiber outputting a second light at a second wavelength wherein the second wavelength is shifted relative to the first wavelength wherein changes in the diaphragm displacement cause the interference pattern to change with a substantially constant speed,

Art Unit: 2855

wherein the monitor and control system comprises a counter that decodes the diaphragm displacement from the substantially constant speed.

Marron et al. disclose that the light transmitting module comprises a first light at a first wavelength and a second light at a second wavelength (plurality of lasers, Fig 1 and col. 5 lines 8-12) wherein the second wavelength is phase shifted relative to the first wavelength (col. 5, lines 2-7) wherein changes in the surface topography of an object causes the interference pattern to change (col. 4, line 58 to col. 5, line 13) wherein the monitor and control system decodes the height of the surface topography from the interference pattern changes.

It would have been obvious to one of ordinary skill in the art to modify the pressure gauge of Duncan et al. by adding the phase shifted second light having a second wavelength of Marron et al. in order to overcome the ambiguity associated with a single wavelength displacement measuring system (displacements differing by an even number of wavelengths are indistinguishable, col. 1, lines 21-32).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,496,265 to Duncan et al. and U.S. Patent No. 3,322,980 to Faure, as applied to claim 1 above, and further in view of U.S. Patent No. 6,105,436 to Lischer et al.

Duncan et al. and Faure fail to disclose that the inner portion of the diaphragm includes a grounded metallic surface wherein the sensor includes a capacitive sensing device positioned adjacent to the grounded metallic surface and wherein the monitor and control system determines the displacement based on capacitive changes in the capacitive sensing device.

Lischer et al. disclose that the inner portion of the diaphragm includes a grounded metallic surface (diaphragm 120 is grounded, col. 4, lines 16-23) wherein the sensor includes a

Art Unit: 2855

capacitive sensing device positioned adjacent to the grounded metallic surface and wherein the monitor and control system determines the displacement based on capacitive changes in the capacitive sensing device (col. 4, lines 24-45).

It would have been obvious to one of ordinary skill in the art to modify the pressure gauge of Duncan et al., including the sensitive diaphragm of Faure, by including the capacitive sensing device of Lischer et al. in order to improve stability, repeatability, and tolerance to overpressure (Lischer et al. col. 6, lines 40-44).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,496,265 to Duncan et al. and U.S. Patent No. 3,322,980 to Faure, as applied to claim 1 above, and further in view of 4,869,282 to Sittler et al.

As to claim 14, Duncan et al. and Faure fail to disclose that the inner portion comprises Kapton.

Sittler et al. disclose a diaphragm that comprises Kapton (col. 6, lines 25-30).

It would have been obvious to one of ordinary skill in the art to modify the pressure gauge of Duncan et al., including the sensitive diaphragm of Faure, by making the diaphragm out of Kapton as taught by Sittler et al. in order to make the diaphragm durable (Sittler et al. col. 6, line 30).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,496,265 to Duncan et al. and U.S. Patent No. 3,322,980 to Faure, as applied to claim 1 above, and further in view of 5,570,428 to Madaffari et al.

As to claim 15, Duncan et al. and Faure fail to disclose that the inner portion comprises Mylar.

Art Unit: 2855

Madaffari et al. disclose a diaphragm that comprises Mylar (col. 3, lines 34-36).

It would have been obvious to one of ordinary skill in the art to modify the pressure gauge of Duncan et al., including the sensitive diaphragm of Faure, by making the diaphragm out of Kapton as taught by Sittler et al. in order to improve the linearity of the deflection of the diaphragm (Madaffari et al., col. 2, lines 4-6).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,496,265 to Duncan et al. and U.S. Patent No. 3,322,980 to Faure, as applied to claim 1 above, and further in view of U.S. Patent No. 5,281,782 to Conatser.

As to claim 16, Duncan et al. and Faure fail to disclose that the inner portion comprises rubber.

Conatser discloses a diaphragm that comprises rubber (col. 5, lines 11-12).

It would have been obvious to one of ordinary skill in the art to modify the pressure gauge of Duncan et al., including the sensitive diaphragm of Faure, by making the diaphragm out of rubber in order to save cost (Conatser, col. 2, lines 27-31).

### ***Response to Arguments***

Applicant's arguments filed 15 November 2005 have been fully considered but they are not persuasive.

At page 12, in response to the rejection of claim 1, Applicants argue that Duncan et al. do not disclose a diaphragm having a rigid outer portion and a displaceable semi-elastic inner portion that is sensitive to pressure changes in a range of approximately 0.1 to 0.5 inches of water. This argument is not responsive to the rejection because the rejected claim 1 did not contain the limitation argued.

This argument is not persuasive with respect to the amended claim because Duncan et al. disclose a diaphragm that is fixed at its edge and deforms in the center. Furthermore, Faure discloses a diaphragm having the claimed sensitivity. It is within the level of ordinary skill in the art to modify a diaphragm in order to alter its sensitivity characteristics to measure a pressure of interest.

In response to the rejection of claim 2, Applicants have cancelled claim 2.

At page 12, in response to the rejection of claims 3-7, Applicants argue that claims 3-7 are allowable for the reasons argued above for claim 1. As discussed above, the argument is not persuasive.

Beginning on page 12 and continuing on page 13, in response to the rejection of claim 10, Applicants argue that Barada does not disclose a diaphragm but only discloses a hot-wire flow sensor. This argument is not responsive because the claim rejected did not include a limitation directed to a diaphragm. Applicants amendment to include a diaphragm indicates that the rejection of claim 10 as being anticipated by Barada, and applicants amendments render the argument moot. Amended claim 10 is rejected under Deschape, who discloses a diaphragm pressure sensor disposed within the bridge portion.

Applicants further argue that Deschape does not teach the use of the sensor for lithography. This argument is not responsive because the recitation of lithography has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See

Art Unit: 2855

*In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Applicants further argue that Deschape does not disclose a measurement leg and a reference leg. This argument is not convincing because the language of claim 10 does not require any particular structure, and the structure disclosed by Deschape meets the limitations recited in claim 10.

Beginning on page 13 and continuing on page 14, in response to the rejection of claims 11-13, Applicants argue that claim 11 is allowable because it depends from claim 10. This argument is not persuasive because, as discussed above, claim 10, as amended, is not allowable.

Applicants further argue that claims 12 and 13 are patentable for the same reasons as claim 10. As discussed above, these arguments are not persuasive.

On page 14, in response to the rejection of claim 14, Applicants argue that for the same reasons as claim 10, claim 14 is allowable. As discussed above, these arguments are not persuasive.

On page 14, in response to the rejection of claim 8 under 35 U.S.C. 103 (a), Applicants argue that for the reasons given for claim 1, claim 8 is allowable. As discussed above, arguments given for claim 1 are not persuasive.

On page 15, in response to the rejection of claim 9 under 35 U.S.C. 103 (a), Applicants argue that claim 9 is allowable because it depends from claim 1. As discussed above, claim 1, as amended, is not allowable. Thus this argument is not persuasive.

### ***Conclusion***

Art Unit: 2855

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George P. Bonanto whose telephone number is (571) 272-2182.

The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2855

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GPB

A handwritten signature in black ink, appearing to read 'M. Noori', is positioned above the printed name.

**MAX NOORI**  
**PRIMARY EXAMINER**